REMARKS

Claim 10 is amended to correct a drafting error and is not amended in response to the rejection of that claim under 35. U.S.C. 103(a).

Claims 1, 2, 7, 10, 11, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U. S. patents 6,721,316 (Epps) and 6,529,478 (Schwartz) The Examiner is respectfully requested to withdraw the rejection of these claims for the reasons set forth below.

Claims 1 and 11

Claims 1 and 11 recite "receiving each incoming packet and generating a cell sequence ... wherein each cell ... is of a uniform size", "making a determination with respect to at least one cell of each cell sequence ... as to whether to discard the cell or store the cell in a memory" and then "storing or discarding the cell in memory in accordance with the determination". Note that the memory stores individual cells, not packets. Schwartz (col. 9, lines 7-10) teaches a network switch input port 20(n) (FIGs. 2, 3) that receives each incoming packet and stores the entire packet in a memory without first breaking the packet into cells (or "segments") as recited in claims 1 and 11. (The packet is converted into a cell sequence only after it is read back out of memory.) Epps also teaches a switch port that stores packets in their entirety in a memory 160 (FIG. 1). Thus neither Schwartz nor Epps teaches the step of "storing ... the cell in memory" as recited in claim 1 or the "third means" of claim 1 for "storing ... the cell in the memory".

Claims 1 and 11 recite "making a determination ... as to whether to discard the cell", thereby indicating that the determination as to whether to discard incoming packet information is made on a cell-by-cell basis after converting a packet into a sequence of cells, rather than on a packet-by-packet basis and before the cell is stored in memory. Schwartz's apparatus determines whether to discard packet information on a packet-by-packet basis and makes the decision only after storing the packet in memory and before breaking the packet into cells (col. 10, line 27 through col. 11, line 5). Epps does not

teach to convert packets into cell sequences, and teaches only to discard packets on a packet-by-packet basis. Thus neither Schwartz nor Epps teaches the step of making a determination ... as to whether to discard the cell" as recited in claim 1 or the "second means" of claim 2.

The applicant's invention of claims 1 and 11 is advantageous over the device taught by Schwartz and Epps because it makes more efficient use of memory than Schwartz's input port. Note that each storage location in Schwartz's or Epps' memory must be large enough to hold a packet, and since packets are of variable size, each storage location must be large enough to hold the largest possible size packet. When not all packets are of the largest possible size, much of the storage capacity of many of Schwartz's or Epps' memory storage locations will be wasted. In the applicant's input port memory, each storage location stores a cell, and since all cells are of uniform size, none of the storage capacity of any storage location is wasted. Also, since Schwartz and Epps devices store packets in memory before deciding whether to discard them, a portion of the memory capacity is wasted storing packets that are to be later discarded. Since the applicant's network switch makes a determination as to whether to discard cells before it stores the cells in memory, none of the storage capacity of the memory is wasted storing cells that are to be forwarded.

Claims 1 and 11 further recites the step of or means for "repetitively generating an estimate of an average number of cells stored in the memory" and determining whether to discard cells before storing them in memory as "a function of the generated estimate." The Examiner correctly points out that Schwartz fails to teach this. Schwartz teaches to discard packets read out of memory based on output port capacity (col. 11, lines 20-41). Like Schwartz, Epps also teaches a switch port (130, FIG. 2) that stores incoming packets from a network in a memory 215 until they can be forwarded through the network switch fabric 120. Epps' switch port 130 also acts as an output port, storing in a memory 286 packets forwarded from other switch via fabric 120 until they can be forwarded outward on the network. Epps' switch port decides whether to discard or forward packet based on an average number of packets in the memory (col. 32,

lines 9-25) rather than based on an average number of cells in memory as recited in claims 1 and 11. Thus neither Schwartz nor Epps teaches step d of claim 1 or the "fourth means' of claim 11.

Claim 1 is therefore patentable over the combination of Schwartz and Epps, because neither reference teaches the recited steps b and d, and claim 11 is patentable over the combination of Schwartz and Epps, because neither reference teaches the recited second means, third means or fourth means.

Claims 2 and 12

Claim 2 depends on claim 1 and is therefore patentable over the combination of Epps and Schwartz for similar reasons. Claim 2 further recites steps of "assigning the cell a discard weight", "comparing the cell's assigned weight to the random number", and "making a determination as to whether to discard the cell ..." The Examiner correctly points out that Schwartz does not teach to assign a discard weight to a cell. Epps teaches only to assign discard weights to packets, and does not teach to assign discard weights to individual cells of cell sequences derived from packets as recited in claim 2. Thus claim 2 is further patentable over Epps and Schwartz because neither references teaches additional limitations of claim 2. Claim 12 is patentable over the combination of Epps and Schwartz for similar.

Claim 10

Claim 10 depends on claim 1 and is therefore patentable over the combination of Epps and Schwartz for similar reasons. Claim 10 further recites "the estimated average number of cells stored in the memory is estimated ... whenever there is a change in a number of cells currently stored in the memory." Epps does not teach to estimate an average number of either cells or packets in memory. Schwartz teaches only to estimate an average number of packets in memory, and does not tech to estimate an average number of cells in memory whenever there is a change in number of cells in the memory as recited in claim 10. Thus claim 10 is further patentable over Epps and Schwartz because neither references teaches additional limitations of claim 10.

Claims 7 and 17

Claim 7 depends on claim 1 and is therefore patentable over the combination of Epps and Schwartz for similar reasons. Claim 7 further recites "multiplying a number of cells currently stored in memory by a quantity...", and "generating a next estimate of a number of cells stored in the memory..." Epps does not teach to make such calculations with respect to the cells stored in memory, since Epps does not teach storing cells in a memory. Thus claim 7 is further patentable over Epps and Schwartz because neither teaches additional limitations of claim 7. Claim 10 is patentable over the combination of Epps and Schwartz for reasons similar to those set forth above in connection with claim 7.

In view of the foregoing remarks, it is believed the application is in condition for allowance. Notice of Allowance is therefore respectfully requested.

Respectfully submitted,

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